STATE OF LOUISIANA

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

HIGHWAY TRAFFIC NOISE POLICY

March 2004

(Amended August 2009 for Type II)

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Purpose: The purpose of this directive is to establish policy and procedures for noise studies and abatement measures to help protect the public health and welfare, to supply criteria for the identification of highway traffic noise impacts, and to provide local officials with information for use in the planning development adjacent to highways.

Scope: This directive applies to the development of Federal-Aid projects approved in accordance with Title 23, United States Code (U.S.C.) or as otherwise directed by DOTD. It also applies to the construction of new control of access facilities funded solely by DOTD or an authority of DOTD.

Policy: It will be the policy of DOTD that highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials in this directive comply with the noise standards mandated by 23 U.S.C. 109(i) and consistent with procedural requirements codified by 23 C.F.R. 772.

Definitions:

Benefited Receptor - a sensitive receptor, whether impacted or not, receiving 5 dBA or more reduction in the noise level as a result of the proposed abatement.

Design Year – the future year used to estimate the probable traffic volume for which a highway is designed. The design year will normally be 20 years from the start of project construction.

Existing Noise Levels – the noise, resulting from the natural and mechanical sources and human activity, usually present in a particular area. In noise studies, this will be the level predicted to occur in the year of initial project construction.

Leq – the equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as a time-varying sound level during the same period.

Leq(h) – the hourly value of Leq.

Sensitive Receptor – One of the types of examples contained in The "Description of Activity Category" column shown in Table 1.

Traffic Noise Impacts – impacts which occur when the predicted traffic noise levels equal or exceed the DOTD Noise Abatement Criteria (see Table 1), or when the predicted traffic noise levels exceed the existing noise levels by 10 dBA.

Type I Project – a proposed Federal or Federal-aid highway project for the construction of a highway on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-travel lanes. For State-funded only projects, a Type I project is defined as a new control of access highway.

Type II Project – a proposed project to provide noise abatement on an existing highway.

Federally Funded Type II Highway Traffic Noise Projects:
A Type II project is a proposed Federal or Federal-aid project solely for the construction of highway traffic noise abatement along an interstate highway. The development and implementation of a Type II project is not mandated under CFR 23 U.S.C 109(i) and is, therefore, not required to receive Federal-aid. However, for a federally funded Type II project to receive Federal-aid, it must comply with all sections of 23 CFR 772 that pertain to Type II projects, including 23 CFR 772.13(b) which states, "For Type II projects, noise abatement measures will only be approved for projects that were approved before November 28, 1995, or are proposed along lands where land development or substantial construction predated the existence of any highway. The granting of a building permit, filing of a plat plan, or a similar action must have occurred prior to right-of-way acquisition or construction approval for the original highway. Noise abatement measures will not be approved at locations where such measures were previously determined not to be reasonable and feasible for a Type I project." In additional to these regulatory requirements, **LDOTD will only consider Type II noise abatement when directed by U.S. Congress through legislation wherein sufficient non-formula funds are appropriated for the project.**

State-Funded Type II Highway Traffic Noise Projects:
LDOTD will **not consider** Type II noise abatement for State-Funded Projects.

Applicability: This directive applies to all Type I projects and Type II projects as defined above.

Table 1 – DOTD Noise Abatement Criteria*
Hourly A-weighted Sound Level – decibels (dBA)

Activity Category	Leq (h)	Description of Activity Category
A	56 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	66 (Exterior)	Picnic areas, recreational areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals.
C	71 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	-------	Undeveloped lands.
E	51 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

* These criteria are consistent with the FHWA Noise Abatement Criteria (23 C.F.R 772) allowing for consideration of traffic noise impacts 1 dBA below the FHWA criteria.

Analysis of Traffic Noise Impacts and Abatement Measures: DOTD will determine and analyze expected traffic noise impacts and alternative noise abatement measures (see list of abatement measures beginning on page 6) to mitigate these impacts, giving weight to the benefits and cost of abatement, and to the overall social, economic and environmental impacts.

The traffic noise analysis will include the following for each alternative under detailed study:

a. Identification of existing activities, developed lands, and undeveloped lands for which development is planned, designed and programmed, which may be affected by noise from the highway (Development will be deemed to be planned, designed and programmed if a noise-sensitive land, such as a residence, school, church, hospital, or library, has been issued a building permit from the local agency with jurisdiction at the time of the highway traffic noise analysis);

b. Determination of existing noise levels;

c. Prediction of traffic noise levels;

d. Determination of traffic noise impacts; and

e. Examination and evaluation of alternative noise abatement measures for reducing or eliminating the noise impacts.

Determination of Existing Noise Levels: The determination of existing noise levels will be made utilizing field measurements of actual noise levels. A log will be kept noting the time of day, meteorological conditions, calibration results, and any unusual ambient noise sources experienced during each measurement.

Noise measurements will be taken utilizing ANSI Type 1 or Type 2 Sound Level Meters used in accordance with the manufacturer's operations manual. Meters are to be calibrated before and after each measurement. Meters should have valid factory calibration certification.

Noise measurements will be taken in time intervals no shorter than 15 minutes and no longer than one hour unless alternate intervals are given prior approval by DOTD.

Actual traffic counts will be made during each field measurement. These traffic counts will be categorized according to the following vehicle classes:

Automobiles (A) – all vehicles with two axles and four wheels designed primarily for transportation of nine or less passengers or transportation of cargo.

Medium Trucks (MT) – all vehicles with two axles and six wheels designed for the transportation of cargo.

Heavy Trucks (HT) – all vehicles having three or more axles designed for the transportation of cargo.

Buses (B) – all vehicles designed to carry more than nine passengers.

Motorcycles (M) – all vehicles with two or three wheels and an open-air driver/passenger compartment.

Sites selected for field measurements will receive prior approval of DOTD. These sites will represent noise sensitive receptors in each Activity Category which are likely to be affected by the project. Sites outside of the immediate vicinity of the project may also be chosen to determine the ambient noise levels unaffected by the roadway. Unless specifically approved by DOTD, field measurements will be taken to represent exterior activities only.

Field measurements will be taken at approved sites at peak and off-peak times. Peak hour noise levels will be the hour with the highest noise levels, not necessarily the hour with the highest traffic volumes.

Field noise studies will be as required to determine the peak hour Leq. The measurement of other noise descriptors will only be made with prior approval of DOTD.

Upon the consent of the Environmental Engineer Administrator, existing noise levels may be determined by utilizing other methodology, including computer models consistent with the current FHWA highway traffic noise prediction model. Traffic characteristics, data, selection of receptor locations, and other input parameters utilized will be at the discretion of DOTD.

Prediction of Traffic Noise Levels: Any traffic noise prediction methodology is approved for use in any traffic noise analysis required by this policy if the methodology used at the time the noise study is performed is consistent with the FHWA highway traffic noise prediction model in effect at the time of the analysis and the prediction method uses current FHWA reference energy mean emission levels or such levels as measured by current FHWA measurement procedures.

In predicting noise levels and assessing noise impacts, traffic characteristics that will yield the worst hourly traffic noise impact on a regular basis for the design year will be used. The period with the highest sound levels may not be at the peak traffic hour but instead, during some period when traffic volumes are lower but the truck mix or vehicle speeds are higher.

Future noise levels will be based on modeling results utilizing data for the design year. This data, including traffic volumes, composition and speed, other reasonably foreseeable development, and the implementation of other transportation projects, will be based on accepted engineering practice and local planning assumptions.

Identification of Traffic Noise Impacts: Traffic noise impacts occur when the DOTD Noise Abatement Criteria (Table 1) are equaled or exceeded at any sensitive receptor under study, or the predicted noise levels exceed the existing noise levels at any sensitive receptor by 10 dBA.

Noise Abatement: In determining and abating traffic noise impacts, primary consideration is to be given to exterior areas. Abatement will usually be necessary only where frequent human use occurs and a lowered noise level would be of benefit.

In those situations where there are no exterior activities to be affected by the traffic noise, or where exterior activities are far from or physically shielded from the roadway in a manner that prevents an impact on exterior activities, the interior criterion may be used as the basis for determining noise impacts.

If a noise impact is identified, the abatement measures listed herein must be considered. When noise abatement measures are being considered, every effort will be made to obtain a substantial noise reduction of at least 8 dBA. At least one sensitive receptor must receive an 8 dBA reduction for the noise abatement system to be feasible.

Before adoption of a Final Environmental Impact Statement, Finding of No Significant Impact, or Categorical Exclusion, for Federal-aid projects, or final Scope and Budget Memorandum for 100% State-funded projects, the DOTD will identify noise abatement measures, including dimensions and locations if noise barriers are proposed, which are reasonable and feasible and will be incorporated in the project. The DOTD will also identify noise impacts for which no apparent solution is available.

The noise study report will document the results of the noise study. This report may be a stand alone document incorporated into the NEPA document by reference, or it may be included in the appendix of the NEPA document.

For Federal-aid projects, the date of adoption of the Record of Decision, Finding of No Significant Impact, or Categorical Exclusion will become the date of public knowledge. For 100% State-funded projects, the date of adoption of the final Scope and Budget Memorandum will become the date of public knowledge. The date of public knowledge is the date at which the DOTD will no longer be responsible for providing noise abatement for new development which occurs adjacent to the proposed project. Provision of such abatement measures becomes the responsibility of the local communities or private developers.

The views of impacted residents will be a major consideration in reaching a decision on the reasonableness of abatement measures to be provided. When noise abatement measures are proposed for a project (only those measures deemed feasible and potentially reasonable will be proposed), proper public involvement procedures (i.e., Public Meetings or Public Hearing, etc.) will be implemented to ascertain the views of impacted residents in an initial determination of the reasonableness of noise abatement measures prior to finalization of the NEPA requirements. Public Involvement will be tailored to the project, and public concerns will be documented in the noise report.

In cases where FHWA does not approve the plans, specifications and estimates under its Stewardship Agreement with DOTD, DOTD will certify that noise abatement measures adopted in the Record of Decision, Finding of No Significant Impact, or Categorical Exclusion

are included in the plans, specifications and estimates. This certification will be included in DOTD's submission to FWHA of the authorization and project agreement request.

Plans, specifications and estimates will not be approved by FHWA or DOTD unless provisions are made to provide the noise abatement measures in accordance with the approved environmental document.

The noise abatement measures listed below may be incorporated into Type I projects to reduce traffic noise impacts.

(1) Traffic management measures (e.g., traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits and exclusive lane designations),

(2) Alteration of horizontal and vertical alignments,

(3) Acquisition of property rights (either in fee or lesser interest) for the construction of noise barriers,

(4) Construction of noise barriers (including landscaping for aesthetic purposes) whether within or outside the highway right-of-way,

(5) Noise insulation of public use or nonprofit institutional structures (Noise insulation is normally limited to public use structures such as schools and hospitals), and

Use of pavement surfacing, which has documented noise abatement qualities, for noise abatement will only be used on State funded projects, and the decision to use pavement surfacing for noise abatement purposes will be made on a case by case basis.

There may be situations where severe traffic noise impacts (i.e., traffic noise levels 20 dBA greater than the DOTD Noise Abatement Criteria (see Table 1) or noise levels 30 dBA greater than the existing noise levels) exist or are expected and the abatement measures listed above are physically infeasible or economically unreasonable. In these instances, noise abatement measures other than those listed above may be proposed by DOTD and approved by FHWA on a case-by-case basis when preconditions for federal funding for noise abatement measures have been met, or by the Chief Engineer when State-funded only.

Determination of Feasibility and Reasonableness:

Feasibility: In determining the feasibility of providing noise abatement measures, DOTD will consider the engineering aspects of the project design features and abatement measures. Among those items to be considered are the following: overall barrier height, achieving the requisite insertion loss, drainage, safety, access, maintenance, etc. DOTD will incorporate design features that best accommodate noise abatement measures on Type I Projects where noise impacts occur.

In determining the feasibility of providing noise abatement measures, at least one receiver must receive a minimum of 8 dBA reduction. If no receivers receive this minimum noise reduction, the abatement measure is deemed not to provide substantial noise reductions and is not feasible.

Reasonableness: In determining the reasonableness of providing noise abatement measures, DOTD will balance the interests of the overall public good with the social, economic, and environmental impacts and the costs of the noise abatement measures. Additionally, on each project where noise impacts occur, DOTD will consider the following:

(1) The cost estimate of the noise abatement measure (including the costs of real estate acquisition, construction servitude or utility relocation) should be equal to or less than $25,000 per benefited receptor,

(2) Feedback from the public involvement during the NEPA process to ascertain community desirability (views of impacted residents will be given major consideration),

(3) Amount of development which occurred before and after, as indicated by the date of plat approval, the initial highway construction,

(4) The age of development and the longevity of the noise impact from the highway,

(5) Effects on the natural and human environments,

(6) Extent of zoning changes in development toward a less sensitive land use (i.e., Activity Category - see Table 1.), and the effectiveness of land use controls implemented by local officials to prevent incompatible development,

(7) The effect that background or ambient noise may have on receptors,

(8) The noise contribution from other (non-highway) sources in the area, such as rail traffic, aircraft and watercraft, industrial equipment, etc.,

(9) The extent to which the predicted future build noise levels exceed the DOTD Noise Abatement Criteria (Table 1) for each applicable Activity Category,

(10) The extent to which the predicted future build noise levels exceed the existing noise levels, and

(11) The extent to which the predicted future build noise levels exceed the future no-build noise levels.

Additional Considerations:

There may be extenuating circumstances where unique or unusual conditions may warrant special consideration of highway traffic noise impacts and/or implementation of noise abatement measures. These circumstances could involve areas such as (1) those that are

extremely noise sensitive, (2) those where severe traffic noise impacts are anticipated, or (3) those containing resources protected under 49 U.S.C. 303 (Section 4(f)). Such extenuating circumstances will be considered on an individual project basis.

In determining the number of residences impacted/protected, the number will include all dwelling units (i.e., owner-occupied, rental units, mobile homes, etc.).

In multistory buildings, primary consideration will be given to protection of exterior activities on the ground floor.

For Recreational Vehicle (RV) Parks, consideration will be given to protection of parks with a history of long-term residents or tenants (i.e., similar to that of a mobile home park).

Information for Local Officials: In an effort to prevent future traffic noise impacts on currently undeveloped lands, DOTD will inform local officials, within whose jurisdiction the highway project is located, of the best estimation of future noise levels for both developed and undeveloped lands or properties in the immediate vicinity of the project and information that may be useful to local communities to limit future land development to that which will be compatible with anticipated highway noise levels.

A copy of the environmental document (with included noise study) and/or noise study report (if one is prepared) will be provided to local officials upon approval of the Record of Decision, Finding of No Significant Impact, Categorical Exclusion or final Scope and Budget Memorandum.

Local officials or agencies, which may have jurisdiction and must be provided this information, include the Mayor's office, city/town/parish council, parish police jury, and metropolitan planning organization, as applicable.

Construction Noise: The following general steps are to be performed for all Type I projects:

a. Identify land uses or activities that may be affected by noise from the construction of the project. The identification is to be performed during the project development studies.

b. Determine the measures that are needed in the plans and specifications to minimize or eliminate adverse construction noise impacts to the community including alternate designs to keep noise levels to a minimum (e.g. the use of drilled shafts vs. driven piles in noise sensitive areas). This determination will include a weighing of benefits achieved and the overall adverse social, economic, and environmental effects and costs of abatement measures.

c. Incorporate the needed abatement measures in the plans and specifications.

When practicable, DOTD will construct any permanent noise abatement measures as the first phase of a highway construction project to abate construction noise impacts of subsequent phases of the same project.

Revision: DOTD may revise this policy as necessary to keep current with the state-of-the-art technology, legislation, regulation, and guidance, as well as construction cost indices in the fields of highway traffic noise prediction, impact, and abatement.

Revisions to this policy affecting Federal or Federal-aid projects must be concurred with by the FHWA prior to adoption.

DOTD and FHWA are not responsible for notification of revisions to this policy. Inquiries as to the latest revision that may be applicable should be made in writing to:

Environmental Engineer Administrator
Louisiana Department of Transportation and Development
Post Office Box 94245
Baton Rouge, Louisiana 70804-9245

Implementation Plan: This directive will become effective March 15, 2004. It will apply to all projects started on or after the above effective date, and to all projects currently being evaluated pursuant to NEPA that do not have a completed noise study. Unless otherwise stated in the environmental document, this directive does not apply to projects that have obtained final approval or approval for public distribution prior to the effective date (Categorical Exclusion, Environmental Assessment, Finding of No Significant Impact, Draft or Final Environmental Impact Statements, Record of Decisions, or Scope and Budget Memorandum). The August 2009 Amendment instituting the Type II Program will become effective, upon approval of the Amendment by the Federal Highway Administration.

U.S. Department
of Transportation
Federal Highway
Administration

Louisiana Division

5304 Flanders Drive
Suite A
Baton Rouge, LA 70808

August 19, 2009

In Reply Refer To:
August 2009 Amended
Highway Traffic Noise
Policy

William D. Ankner, Ph.D.
Secretary
Louisiana Department of Transportation
and Development
Baton Rouge, LA

Dear Dr. Ankner:

Your August 3, 2009, letter submitted a copy of the Department's Highway Traffic Noise Policy, dated March 2004 as amended August 2009. The amended policy which adds a restricted Type II program is approved.

Sincerely,

/s/ Charles "Wes" Bolinger

Charles "Wes" Bolinger
Division Administrator

cc: Ms. Sherri LeBas (LADOTD)
Mr. William Temple (LADOTD)
Ms. Noel Ardoin (LADOTD)
Mr. Mark Ferroni (FHWA) w/e
Ms. Ruth Rentch (FHWA) w/e
Ms. Michelle Sayyar, (FHWA) w/e